

REMARKS

Claims 1-28 are pending. Claims 1-28 were rejected. Claims 1, 4, 6-7, 9-10, 12-14, 16-17, 19-23, 25, and 27-28 have been amended. Claims 29-31 are new. Further examination of the claims is requested.

The Examiner objected to the term "diode means" in claim 22 and suggested replacing the term "diode means" in claim 20, from which claim 22 depends. Applicants have amended claims 20 and 22 to use the term "variable impedance means" in order to clarify the meaning of the claims.

The Examiner rejected claims 1-7, 10-12, 14, 17-22 and 25-28 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,247,305 ("Hirata et al.") in view of U.S. Patent No. 5,119,099 ("Haruyama et al.").

Independent claim 1 recites "a transponder ... configured to return a backscatter response of a substantially constant power level." While not identical in language or scope, independent claims 4, 6, 7, 10, 12, 17, 20, 25-28 and new claims 29-31 recite a similar limitation. Support for the amendments is found in the Specification at page 3, lines 20-24 and page 5, lines 9-18. Hirata does not disclose a transponder configured to return a response signal of a substantially constant power level. Instead Hirata's transponder is configured to vary the power level of the response signal and operates alternately in an absorptive state, in which no signal is transmitted, or in a state where substantially less power is transmitted. See Hirata, Abstract at 10-14; column 5, line 40 to column 6, line 24; column 7, lines 3-36; and Figure 16. Haruyama does not teach or suggest a transponder configured to return a backscatter signal of a constant power level because Haruyama is directed to "a microwave responder which resonates or does not resonate with a microwave in accordance with a response signal." Haruyama, column 1, lines 5-11.

With regard to claims 1-3, 17-19, and 25-26, the Examiner concedes that Hirata does not disclose a stub having a length other than a wavelength of the interrogation signal and coupled to the second conduction terminal of the switch, as recited in claim 1. The Examiner argues this would have been obvious in view of Figure 9 of Haruyama, and the description at column 1, lines 38-62. Applicants respectfully disagree.

Claim 1 recites "a switch having a control terminal and first and second conduction terminals, the first conduction terminal coupled to the antenna" and "a stub having a length other than a wavelength of the interrogation signal and coupled to the second conduction terminal of the switch." While not identical in language or scope, claims 17 and 25 contain similar limitations. The Examiner points to Hirata's switch 61 of Figure 5 as the claimed switch, as well as the description at column 6, lines 44-50 and Figure 1. Hirata's Switch 61 is part of the power supply circuit and is coupled between the antenna and a resistor, which is connected to a power supply P2. The Examiner contends it would be obvious to remove the switch 61 from Figure 5 and couple it to microstrip line 4 of Figure 9 of Haruyama. The circuit of Hirata, however, would not function as intended if no power were supplied to the power supply P2 or if the power supply were not varied. Thus, there is no motivation to couple the switch 61 to the microstrip line 4 of Haruyama. Accordingly, Applicants respectfully submit that Hirata in view of Haruyama does not render claims 1-3, 17-19, and 25-26 obvious.

With regard to claims 2, 18 and 26, which recite a quarter-wavelength stub, microstrip line 184 of Hirata to which the Examiner refers is part of a rectifying circuit. There is no indication it is used to phase-modulate a signal to be reflected. Thus, there is no suggestion that it is interchangeable with the half-length line 4 of Haruyama.

With regard to claims 4-5, 12, 20 and 27, Applicants previously noted that claim 4 recites "a phase modulator having a diode, a first terminal of the diode coupled to the antenna and a driver coupled between the memory and a second terminal of the diode, the driver structured to produce a modulating signal corresponding to the information code, the modulating signal comprising a variable voltage that modulates a capacitance of the diode to phase modulate the interrogation signal and thereby produce a response signal." The Examiner pointed to diodes 53 and 63 of Figures 4 and 5 of Hirata as the claimed diode and to ROM 36 of Figure 2 and RAM 1140 of Figure 17 as the claimed memory. Applicants argued that diode 53 is coupled directly to the memory, thus there is no driver coupled between the memory and the diode 53, as recited in claim 4. With regard to claim 17, Applicants argued that the same terminal of the diode that is coupled to the antenna is coupled to the identification code generator D. In response, the Examiner points to Figures 1 and 17 and to two different memories (code generator

memory 36 and RAM 1140) and argues that the diode is coupled between the antenna and a memory (36) and that a driver (CPU 1130) is coupled between the memory (RAM 1140) and the diode. The Examiner's response does not address the fact that the driver (1130) to which the Examiner points and the antenna are connected to the same terminal of the diode and thus cannot be the claimed diode. Accordingly, claims 4-5, 12, 20 and 27 are not rendered obvious by the combination of Hirata and Haruyama.

With regard to claims 6, 13 and 22, claim 6 recites "a first diode having first and second ends, the second end coupled to the antenna; a second diode having first and second ends, the first end coupled to the antenna and the second end of the first diode; a stub coupled to the second end of the second diode; a parallel RC circuit coupled between the stub and a reference voltage; and a driver coupled between the memory and the first end of the first diode." Claims 13 and 22, while not identical in language or scope to claim 6, have similar limitations. The Examiner cites components from different embodiments of Hirata and, alternately treating diode 73 and diode 190 as the claimed second diode, argues that the limitations of the claim are satisfied. The Examiner, however, does not identify a diode disclosed in Hirata that satisfies the limitations of the claimed second diode. Further, there is no suggestion in Hirata to selectively combine some of the connections of diode 73 and some of the connections of diode 190 in Hirata to achieve the claimed second diode. Accordingly, Applicants respectfully submit that claims 6, 13, and 22 are allowable over Hirata and Haruyama, taken alone or in any combination thereof.

The Examiner next rejects claims 8-9, 15-16, 23-24 and 28 under 35 U.S.C. § 103 as obvious over Hirata in view of Haruyama, or in the alternative, in view of U.S. Patent No. 3,656,069 ("Beccone, et al."). Beccone is directed to a general transmitter and not to backscatter. As such, Beccone does not supply the teaching missing from Hirata and Haruyama noted above, namely a transponder reflecting a response signal of a substantially constant power level.

Claim 13 has been rejected under 35 U.S.C. § 103(a) as obvious over Hirata in view of U.S. Patent No. 5,247,305 ("Entschladen et al."). As noted above, Applicants respectfully submit that Hirata is not an appropriate primary reference. Further, like Beccone, Entschladen does not discuss backscatter, and thus does not disclose returning a backscatter

response signal having a substantially constant power level. Thus, Applicants respectfully submit that Entschladen is not an appropriate reference. It does appear the Examiner is asserting that because Entschladen illustrates an antenna with two diodes coupled to it, one with its anode coupled to the antenna and the other with its cathode coupled to the antenna, it would have been obvious to reverse the connection of one of the diodes shown in Figures 15 or 20 of Hirata. Hirata device would not function if one of the diodes was reverse connected. Thus, there is no teaching or motivation to combine Hirata and Entschladen in this fashion. Accordingly, Applicants respectfully submit that claim 13 is not rendered obvious by the combination of Hirata and Entschladen.

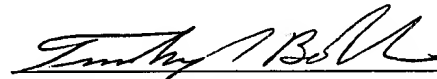
The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

Curtis Lee Carrender et al.

SEED Intellectual Property Law Group PLLC



Timothy L. Boller

Registration No. 47,435

TLB:rg

Enclosure:

Postcard

701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031